

Cross-Currents in Modern Religious Thought Series

MAN AND HIS ANCESTORS

BY

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"*A Chart of Old Testament and
Contemporaneous History.*"



Price 35 Cents

THE BICKLEY PRESS, Publishers
67 North Raymond Avenue
Pasadena, California

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Published September, 1928

A FOREWORD

This bulletin represents an attempt on the part of a layman to evaluate the evidence drawn from the field of paleontology to establish man's genetic relationship with the primates. The writer has no theory of his own to advance concerning man's origin or pre-human antecedents; for many years he has been a persistent and unprejudiced student of the ever increasing volume of biological literature, and is not, and never has been, in the least, opposed to the theory of evolution; he is, however, decidedly opposed to the tendency manifested on the part of certain enthusiastic biologists to present some of their purely scientific theories as though they were clearly established scientific facts.

Man and ape may be blood relatives, emanating from a common anthropoid ancestor who lived far back in Miocene Times, but the present available evidence for such a conclusion is not sufficient to warrant any biologist in asserting that this belief is "as well established as the law of gravitation." It is because of such extravagant and ungarded statements as these that this bulletin has been written.

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MAN AND HIS ANCESTORS

"We have locked up in the cupboard of the world, not a skeleton, but a fairy angel."—*A. Clutton-Brock.*

I. IS MAN GENETICALLY RELATED TO THE PRIMATES?

Does that phase of evolution which asserts that man is genetically related to the primates belong in the realm of established scientific fact, or should it remain in the twilight zone of scientific theory? As an impartial student of this subject, extending over a period of more than twenty years, I am forced to the conclusion that this particular phase of evolution must still remain, for the time being, at least, in the realm of scientific theory rather than in that of clearly established scientific fact. In reaching this conclusion I have been influenced, not in the least by religious, theological or Biblical considerations, but by evidence derived entirely from historical and scientific sources.

Personally, I accept the fact of evolution for I see many reasons for such an acceptance. But I also recognise the fact that evolution has its limitations. There is no longer any question about the fact; the real issues now are concerned with cause and extent. I am not in the least prejudiced against the evolutionary view of man's origin, and would gladly accept

MAN AND HIS ANCESTORS

it if the evidence were sufficient to justify the theory. There was a time when I wanted to accept this view for, like some of its present day advocates, I thought it manifested a little higher degree of intelligence to claim genetic relationship with the lowly ape, but after examining the evidence in the case, I must say that until more and better evidence is available, I must refrain from identifying myself with those (Many of whom are among my best friends) who regard this theory as an established scientific fact.

II. NOT A QUESTION OF "EVOLUTION OR CREATION."

When one questions the evolutionary hypothesis as to the origin and nature of man, it does not necessarily commit him to the acceptance of the Genesis story of man's creation. The Genesis story is a religious truth and should never be interpreted as an historical portrayal of a literal scientific fact. This story was written primarily to reveal the love of God, the Father; our dependence upon him, and his relation to us; it represents man as the highest product of God's creative energy, and the object of his tenderest care and solicitude. The man, or men, who wrote the early chapters of Genesis did not anticipate modern physical science; they simply used the science of their day as they knew it, not for the purpose of making any contribution to the sum of man's scientific knowledge, but for the purpose of enforcing a great religious truth. And to treat these ancient writings as literal scientific pronouncements, is to misinterpret completely the aim and purpose which called them into being.

MAN AND HIS ANCESTORS

With the understanding, then, that this is not to be a discussion of the proposition "Resolved that man is the product of Special Creation and not of Organic Evolution," but a consideration and evaluation of the evidence which has been adduced to establish man's genetic relationship with the brute creation, especially in the field of paleontology.

III. MOST SPECIALISTS UNDULY INFLUENCED BY THEIR DATA.

Quite frequently we find the specialist in the field of biology, like the specialists in practically every other field, including that of religion, making claims for his material which the material is utterly incapable of making for itself. He is ever seeking "To point a moral or adorn a tale." The mind of some men is so highly specialized as to render them incapable of seeing life steadily or seeing it as a whole. However, we need the specialist; we could not live without him; but occasionally he leads us up some blind-alley and leaves us in the dark. And worst of all, whenever one of his theories or pronouncements is questioned, he insists that he, and he only, is capable of acting in the three-fold capacity of judge, jury and witness, and because he wins his case, as he is sure to under the circumstances, he deludes himself into thinking he was right from the beginning.

When one takes the statement of scientific men as to just what is required to establish a scientific fact, and then try to apply that same standard to the theory of man's descent from a long line of simian and pre-human ancestors, the theory simply fails to qualify

MAN AND HIS ANCESTORS

as science. It can not be made to meet the test set by its own advocates. It would be most interesting, if not a little disconcerting, to subject this theory to the same kind of cold-blooded, analytical, test which men of science insist, and rightly so, should be applied to the various books of the New Testament to determine their degree of reliability and trustworthiness. The New Testament has stood the test; no man has ever been able to show that it was not reliable and trustworthy; would this theory, which has been taken for granted by most of its advocates, prove to be equally invulnerable?

IV. SOME UNWARRANTED ASSERTIONS.

After one has gone through some of the recent books and magazine articles in which man's supposed animal ancestors are discussed, identified and classified, and then pauses long enough to consider the nature of the evidence upon which it is all based, he can not help feeling just the least bit amazed at the tone of assurance with which some men speak. Professor Richard Swan Lull of Yale University in his article "The Pulse of Life" which appeared in the volume, *The Evolution of the Earth*, p. 139 (Yale University Press, 1918) says that "Man's nearest blood relatives, whatever may be his prejudice in the matter, are the so-called anthropoid or man-like apes: the orang, chimpanzee, gorilla, and gibbon, all descendants from the same stock which gave rise to humanity and perhaps fallen to their present condition through being the victims of circumstances." Now this may all be true. Man's nearest blood relatives may be the "anthropoid or man-like apes," but the evidence upon which this

MAN AND HIS ANCESTORS

rather definite assertion is based is so fragmentary and of such a hypothetical nature as to make it appear almost ridiculous, especially when it is professed to be made in the name of science. While Professor Lull is an outstanding authority in his chosen field—that of paleontology—yet he has no "inside information" on man's animal ancestry. The materials upon which he bases his assumptions are well known and have been common property—much of it at least—for the last twenty-five years or more. We are concerned here, not with the startling revelation drawn from a mass of new, and hitherto unavailable, material, but with a particular set of inferences drawn from materials that are quite limited, but old and well known.

In the North American Review for June, 1923 an article appeared under the caption "*Recent Biology and Its Significance*" in which the writer, Vernon Kellogg, discussing the skeletal remains of ancient man found in England and western Europe, said "To add to the evidence of these indubitable human fossils of indubitable antiquity running back from a score of thousands to a half million years. . . . As we survey the imposing array of human fossils (He should have said McGregor's array of reconstructions in the Museum of Natural History, New York City) now on exhibition before the wondering eyes of modern man, running from ape-man Pithecanthropus through Heidelberg and Piltdown dawn-man, on through Neanderthal and Cro-Magnon man up to man of today, we can simply see plainly, before our eyes, man's physical evolution."

Again this same scientist, Professor Kellogg, writ-

MAN AND HIS ANCESTORS

ing for the *Atlantic Monthly*, April, 1924, deplores the fact that it seems necessary to review the "unmistakable evidence" for man's descent from lower forms of life, and then by way of recapitulation he says "the occurrence of fossils of prehistoric man from the days of early glacial time, a half-million years ago, up to the near-present, showing the gradual changes in skeletal structure, with their unmistakable implications, the straightening leg, and reducing jaw and orbital and occipital crests, and the expanding brain cavity, in a word, the changes from beastliness to humanness." Could any one speak with greater confidence than this? But when we come to examine the "unmistakable evidence" upon which Professor Kellogg rests his rather dogmatic assertions we shall see, I predict, that he is speaking with an air of assurance which is wholly out of keeping with the nature of the evidence at his disposal.

Another article, similar in tone to the ones from which we have just quoted, appeared in the June, (1923) number of the *Popular Science Monthly* under the joint authorship of Drs. Free and Gregory. In referring to the Java man or Pithecanthropus, they say "Long before Dubois' discovery, scientists were sure that man had grown out of some kind of walking ape. The bones (skull, teeth and femur bone of Pithecanthropus) proved what they already knew. They show us unmistakably that the walking ape believed in had really lived." The ever recurring use of "unmistakable" by so many of these writers is a kind of "whistling in the dark," indulged in, doubtless, to keep up courage.

MAN AND HIS ANCESTORS

In an editorial which appeared in the May, (1923) number of *The Scientific American*, the writer seems far less certain regarding the "indubitable" and "unmistakable" proofs upon which Lull, Kellogg, Free and Gregory seem to rely so securely, for he says that the remains of man who lived up to fifty-thousand years ago, are indeed scarce, fragmentary and uncertain, and could easily be placed in a small hand-bag. And that "Whoever approaches the subject hoping to find a full, lucid record already prepared, will soon be disappointed. What we know as yet represents only an occasional contact with the earliest of our ancestors." A statement like this is in exact and complete accord with the known facts in the case; the evidence is "scarce, fragmentary and uncertain" and the employment of such assuring terms as "indubitable" and "unmistakable" is entirely without foundation in facts.

It was Huxley who, more than fifty years ago, said that "The primary and direct evidence in favor of evolution can be furnished only by paleontology if evolution has taken place there will its mark be left; if it has not taken place there will lie its refutation." (Quoted in Newman's *Reading In Evolution, Genetics and Eugenics*, p. 62.) If, then, the evidence for or against this theory is to be found in the field of paleontology, to paleontology let us go and see what contribution it has to make.

V. PITHECANTHROPUS THE OLDEST "MISSING-LINK"

Our first expedition in search for the remains of ancient man will take us to the land of Java, where in

MAN AND HIS ANCESTORS

the year 1891, a Dutch army surgeon, Dr. Eugene Dubois, found what he later reported (1894) to be a human skull cap, two molar teeth and a left femur bone. These remains, it would seem, were scattered about over an area of approximately sixty feet, intermixed with the bones of more than twenty different kinds of mammals. This creature to whom Dubois gave the name "*Pithecanthropus Erectus*" because of its comparatively straight femur bone, had a brain capacity variously estimated at from 650 to 1200 cubic centimeters (c.cm.), was supposed to have been about five feet and six inches in height, and to have lived during late Tertiary or early Pleocene times—possibly, 450,000 to 500,000 years ago. From the day Dubois announced his discovery down to the present time, controversies, heated and bitter, have gathered about this small collection of bones.

In an article contributed to the *Scientific Monthly*, (August, 1922) by Edward W. Berry, professor of Paleontology at Johns Hopkins University, the writer commenting on the discovery made by Dubois says "Our knowledge of the ape-man of Java is on a sound footing. First of all he came from Asia. (No guessing here.) along with the greater part of the considerable variety of animals and plants that are found fossil with him. The motive power was the less hospitable climate in Asia resulting from the gradual uplifting of its great mountain areas in late Tertiary. . . . Our interest centers on the brain case and the fact that he was a ground inhabiting biped and not arboreal." What an imagination one must have to write with such a degree of assurance! How could any man, or for that matter a million men, determine by looking at

MAN AND HIS ANCESTORS

a small piece of skull, two teeth and a femur bone, (something which Prof. Berry had not done at the time of making the above statement) that the possessor of these remains came from a certain portion of Asia; that the climate there was not to his liking; and that he lived on the ground instead of in a tree. It may be that Prof. Berry got his information regarding the early home life and migration of *Pithecanthropus* from Dr. W. K. Gregory, who in his *Origin and Evolution of the Human Dentition*, p. 690 says that *Pithecanthropus* was doubtless "an early side branch of the Hominide, which had already been driven southward away from the primitive center of dispersal in Central Asia, by pressure of higher races."

When one reads such statements as these in the name of science he wonders if there is any thing in all the world that could truly be labeled as "fiction." He is reminded of the statement made some years ago by Professor Frederick Soddy of Oxford University to the effect that a race of superior human beings once inhabited this planet of ours, possibly a million years ago, who after attaining to a very high state of civilization—even mastering radium—became dissatisfied with their surroundings and migrated (as did *Pithecanthropus*) to some other planet where conditions were more in accord with their liking. We of the common herd, qualified neither by nature or training to rightly evaluate scientific evidence, must accept, unreservedly, the pronouncements of the technically trained experts. If not, we deserve to be classed with the back-numbers, moss-backs, and even fundamentalists.

And yet there are men whose names are written high

MAN AND HIS ANCESTORS

on the rolls of modern evolutionists who are not at all certain about the distinction that has been accorded Pithecanthropus among the "Missing Links." They are not at all certain that he should be at the head of his class; some would place him near the foot of the class; while others would expel him entirely from the class.

Henry Fairfield Osborn is inclined to question whether the femur and the skull in the Dubois find really belonged to the same individual, or even to the same race. He says that the two molars do not resemble those of man closely enough to positively confirm the pre-human theory.

J. Arthur Thomson (*Outline of Science*, p. 169) says "Unfortunately the remains of Pithecanthropus consisted only of a skull cap, a thigh bone, and two back teeth, so it is not surprising that experts should differ considerably in their interpretation of what was found. Some have regarded the remains as those of a large gibbon, others as those of a pre-human ape-man, and others as those of a primitive man off the main line of descent."

At the Zoological Congress held at Leyden, Holland during 1895, five eminent anthropologists maintained that Pithecanthropus was a man; seven others equally eminent said he was an ape; and seven others insisted that he was neither ape nor man, but a transition type intermediate between the two. (In this connection see the article by Vernon Kellogg in the *Atlantic Monthly* for May, 1921.) Professor Lull regrets very much that Dubois for years refused to permit his col-

MAN AND HIS ANCESTORS

leges to examine the Pithecanthropus remains and that our knowledge of them must be based entirely on the researches of Dubois alone. (*Evolution of Man*, p. 13.)

For thirty-five years following his discovery, Dubois was persistent in his refusal to allow other scientists to examine the Pithecanthropus remains, although many of them "sought it with tears." This refusal on his part has been productive of no small amount of unfavorable comment, some going so far as to question his veracity in the entire matter. Recently, however, he relented and permitted McGregor, Hrdlicka and others to "view the remains." He now says that none of the published illustrations or casts of Pithecanthropus are accurate. It is now reported, from what we may regard as a reliable source, that Dubois himself has considerably modified his former opinions concerning these remains, and now holds to the view that they belonged to a large ape of the hylobatic type, and not to any intermediate form between man and ape. (See O'Toole's *The Case Against Evolution*, p. 318.)

After his return to America following the examination of the Java specimen, Professor McGregor said the brain of this creature approximated or equaled the minimum size of the normal human brain, but that its form was intermediate between the human brain and that of certain anthropoid apes. He also says that Pithecanthropus may have been a woman. He bases this supposition on the measurements of the femur bone which seems to conform to that of a woman rather than that of a man. (Quoted in *Philadelphia*

MAN AND HIS ANCESTORS

Inquire, October 18, 1923). How interesting all this is. First we were told that Pithecanthropus was our oldest grand-father; then we were informed that he was not a grand-father, but a great-uncle; later we were assured that he was neither grand-father nor great-uncle, but a third-cousin. Now the latest report is, Pithecanthropus was just a woman. Doubtless an old-maid aunt, as there seems to have been no descendents.

In the light of all these uncertain and conflicting theories concerning one little hand-full of bones, how ridiculously absurd to assign this hypothetical creature, Pithecanthropus, to a certain section of central Asia, who growing displeased with climatic conditions in the "home land" migrated southward to the more congenial clime of sunny Java, there to be discovered a half-million years later by a Dutch army surgeon who was on the look-out for "missing links."

So here we part company with Pithecanthropus. Let the reader note that all the adverse testimony against this hypothetical creature has come from the ranks of outstanding and avowed evolutionists. No "Special Creationist" anti-evolutionist or fundamentalist has been permitted to testify. Pithecanthropus has been weighed in the scales of his best friends and found wanting.

VI. THE PILTDOWN MAN—EOANTHROPUS DAWSONI.

In our search for the missing link that is supposed to connect man with a lower order of beings, our search will take us next to Sussex, England, where in

MAN AND HIS ANCESTORS

the year 1911 some bones of a fragmentary character were discovered by workmen embedded in a small stratum of gravel averaging about four feet in thickness at the point of discovery. Additional search extending up to 1913 brought to light a part of a jaw bone, several small pieces of skull, and three teeth. In 1917 at a distance of two miles from the original find, a molar tooth, a small piece of frontal bone, and a part of an occipital bone were found. These fragments were then assembled and the creature to whom they once were supposed to belong was given the name "Piltdown-Dawn-Man, or Eoanthropus-Dawsoni. Mr. Charles Dawson, the man who "made Piltdown famous," assigned him to the lower Pleistocene or Glacial epoch, giving him an approximate age of 350,000 years. The skull was later reconstructed by Dr. A. Smith Woodward, and is now in the British Museum of Natural History at South Kensington, England.

The conflict which has raged, and still rages, about the Piltdown find has been even fiercer than the one which followed the discovery of the Java specimen. Dr. Osborn regards the finding of the Piltdown remains "As the most important recent discovery as to the origin of man." On the strength of this discovery, he has a section in his *Men of the Old Stone Age*, which he has captioned "*The Piltdown Race.*" In an interview which Dr. Osborn accorded Mr. Hugh Weir and reported by the latter in *McClure's Magazine*, (March, 1923), he estimates the age of Piltdown at 500,000 years, but in his *Men of the Old Stone Age* he estimates it as somewhere between 100,000 and 300,000 years. Various estimates have been given for the age of this creature, ranging anywhere between 100,-

MAN AND HIS ANCESTORS

000 and 500,000 years. In the face of such divergence as this concerning the age of one human fossil, one is inclined to view with suspicion the methods employed by science to determine the age of any fossil. If such a range can be allowed in a short geological period of 500,000 years, what may one expect when the range is extended to cover a hundred million years?

In this same interview with Mr. Weir, to which reference has just been made, Dr. Osborn is quoted as saying that the find of 1917 "proved the missing link of scientific investigation." And in this same connection, Mr. Weir reports Dr. W. K. Gregory as saying "This strange creature (Piltdown) may indeed be classed as perhaps the most conspicuous example that science has produced to date of man in the making—one of the innumerable experiments made in nature's vast laboratory in the development of the humanoid stock. The Piltdown man, undoubtedly an early branch of those sub-men from the recesses of time which has achieved a low human stage of brain and brain-case in the process of evolution." Dr. Gregory speaks of the "sub-men from the recesses of time" as though their existence was a matter of common knowledge.

"But it is the skull itself," says Dr. G. F. Scott Elliot, discussing the characteristics of the Piltdown Man in his *Pre-Historic Man*, (p. 127) "that gives the most important evidence of a very early date. . . . It (the skull) is the most primitive and ape-like yet discovered, saving only that of Pithecanthropus." And then, horrors! upon horrors! Elliot says Piltdown was a woman. Like Pithecanthropus, another old-maid aunt.

MAN AND HIS ANCESTORS

After reading all these "infallible proofs" establishing the animal ancestry of the Piltdown man, it is rather disturbing to have an outstanding authority in the field of biology and evolution, such as J. Arthur Thomson, come along and remind us once more that the remains in question consisted only of "the walls of the skull which indicated a large brain and a high forehead without the beetling eyebrows of the Neanderthal man and Pithecanthropus. The find included a tooth and a part of a lower jaw, but these perhaps belonged to some ape, for they were very discrepant." (*Outline of Science*, p. 170) Sir Arthur Keith, England's foremost anthropologist, and an ardent evolutionist, says "All the essential features of modern man are to be seen in this brain cast. . . . There can be no doubt that it is built on exactly the same lines as our modern brains. . . . We may rest assured that a brain which was shaped in a mold so similar to our own, was one which responded to the outside world as ours do. Piltdown man saw, heard, felt, thought, and dreamt much as we do still." (Quoted in *Outline of Science*, p. 170) To quote again this same authority, we read in his *The Antiquity of Man*, vol. 2, p. 578, where in summing up his discussion on the mentality of Piltdown, says: "The results of this survey, and the comparison of the fragments of the skull with corresponding parts of modern skulls, convince students of anatomy that in general conformation, in actual dimensions, and in brain capacity the head of the Piltdown race was remarkably similar to that of modern races." How different in tone are these statements from the dogmatic assertion of Dr. Osborn that Piltdown has proved to be the long lost

MAN AND HIS ANCESTORS

"missing link," and the still more dogmatic pronouncement of Dr. Gregory about the "sub-man" and the experiments in "nature's laboratory."

Dr. G. Schwalbe, famous German anatomist, says the Piltdown skull, so far as brain capacity is concerned, might have belonged to a normal man of modern times. Dr. Osborn allows him a brain capacity of 1300 c.cm., while Dr. Keith, at one time, estimated it as high as 1500 c.cm. This is indeed interesting for scientists today are telling us that in brain capacity the normal man averages around 1400 c. cm. However, in making any such comparison, it is the relative, and not the absolute, size of the brain that should be considered, for the size of the body has a direct bearing on the size of the brain. Knowing nothing as to the physical stature of the Piltdown man, it is utterly impossible to determine whether he was above or below the standard set for men of our own day.

Many scientists of note hold to the view that the bones in the Piltdown find are divergent—belong to different creatures. Sir E. Ray Lankester, famous English anatomist and zoologist, says the skull and jaw never belonged to the same creature. Professor G. S. Miller of the National Museum, Washington, D. C., insists that the teeth and jaw belonged to a chimpanzee. Professor David Watterson of the University of London, says that the pieces of skull were human in their characters, but that the jaw was obviously that of a chimpanzee. Professor George Grant McCurdy writing in "*Science*," February 18, 1916, says the Piltdown skull is human but the jaw and tooth are those of a fossil chimpanzee. Numerous

MAN AND HIS ANCESTORS

other pronouncements of a similar nature might be cited, but doubtless enough have been presented to eliminate the Piltdown man, too, from any attempt to relate him genetically with the brute world.

The reader will note that here again, as in the case of Pithecanthropus, all the adverse judgments against the Piltdown man have come from the ranks of outstanding evolutionists who are in full accord with the theory that man descended from pre-human or simian ancestors.

VII. THE HEIDELBERG JAW.

What is alledged to be another link in the chain of human descent was discovered by two workmen in a gravel pit near Heidelberg, Germany, in 1907 and since that time has been designated as the "Heidelberg Man." This find consisted of a lower jaw and teeth, the jaw having been broken by the spade of one of the workmen. While the teeth on one side of the mandible were found to be in a bad state of preservation, those on the opposite side were complete and normally perfect. The jaw which was almost entirely lacking in chin prominence, is said to resemble closely that of an ape, while the teeth are distinctly human, but considerably out of proportion for such a massive jaw.

According to J. Arthur Thomson, this creature is supposed to have lived 300,000 years ago. (*Outlines of Science*, vol. i., p. 169.) However various age estimates have been proposed for Heidelberg, ranging anywhere between 200,000 and 450,000 years. The first

MAN AND HIS ANCESTORS

public announcement of this discovery was made by Professor Otto Schoetensack of the University of Heidelberg.

It would seem that the only reason for placing this find in the list of "missing links" is drawn from the character of the teeth and the absence of chin prominence. But is that sufficient reason to justify such a conclusion? In this connection it is interesting to recall the finding of the Nebraska Tooth in 1922 to which Dr. Henry Fairfield Osborn gave the high-sounding name of "*Hesperopithecus Haroldcooki*" in honor of its finder, Mr. Harold Cook. This find was at first heralded as the discovery of the tooth of a race of ape-men about midway between *Pithecanthropus* and modern man. This creature, it was thought, had migrated from Asia, the original home of pre-man, to North America by way of the land bridge which once connected these two continents. (*Wilder's Man's Pre-historic Past*, p. 449f.) Recently, teeth of a similar nature have been found in the same locality, and now the authorities of the American Museum of Natural History in New York City, of which institution Dr. Osborn is curator, say they were mistaken regarding the original find, and that the creature to which this lone tooth belonged, was not an ape-like-man, but a member of the swine family—in other words, a primitive pig. ("*Time*," February 27, 1928.) It is barely possible that the time may come when some of the authorities on the ancestry of man may considerably modify their original pronouncements concerning the Heidelberg find of 1907.

Regarding the value of evidence based upon the absence of chin prominence, J. Arthur Thomson says

MAN AND HIS ANCESTORS

(*What is Man?* p. 34) "There is nothing very momentous in the characteristic features of man's chin and heel, teeth and great toe. In point of fact not all types of men have a prominent chin, not all have a perfectly erect attitude." In keeping with this statement of Professor Thomson, it is well to recall that Dr. Birkner produced a modern Eskimo skull from the collection in the Munich Institute that approximated in almost every particular the jaw and teeth of the Heidelberg find. In commenting on the smallness of the teeth and the massiveness of the jaw in the case of *Homo heidelbergensis*, Professor Thomas Dwight, late anatomist of Harvard, said "Either it is an anomaly or the jaw of some aberrant species of ape" (*Thoughts of a Catholic Anatomist*, p. 164.)

Man's chin is no criterion of intelligence. One can no more determine a man's intelligence by the size or shape of his chin than he can determine his past, present or future love affairs by observing the lines in the palms of his hand; one is as unscientific as the other. Man's chin has much—very much—to do with his physical appearance, but absolutely nothing to do with his intelligence.

Some of the books on pre-historic man give the impression that the Heidelberg jaw was discovered by Dr. Schoetensack, himself; but such is not the case. Schoetensack did not see the specimen until the next day. It was found, as has already been indicated, by workmen who had been instructed by Dr. Schoetensack and the owner of the pit, Herr J. Rosche, to be on the lookout for human remains. In fact a search for human remains had been carried on in this region by these

MAN AND HIS ANCESTORS

gentlemen extending over a period of more than twenty years.

Associated with the Heidelberg find were the bones of at least fifteen different extinct mammals, including those of an Etruscan rhinoceros, and animal far antedating in time all other animals represented, including man himself. This fact led Osborn to say that the jaw of Heidelberg had drifted in to its place of discovery with the river sands. And doubtless, extending over a period of thousands of years, the other animal remains with which this jaw was associated, were gradually brought together. If Osborn is correct in this supposition, and there is much evidence in its favor, how utterly impossible it would be to even approximate the age of the human remains found in this conglomerate! And yet it was upon this data, and this alone, that Dr. Schoetensack assigned these remains to Lower Pleistocene or the First Interglacial period of time. Evidence based on anatomical distinctions apart from geological confirmation, is practically valueless in determining the age of any fossil. In this connection it is interesting to recall the incident related by Professor Lull (*The Evolution of Man*, p. 8f.) of finding the remains of an extinct horse in what appeared to be undisturbed Pleistocene deposit, but on further investigation discovered a modern glass bottle lying directly beneath the hip of this extinct creature. The remains of the horse were very ancient; the bottle quite modern; yet together they occupied a common burial ground. In a natural accumulation like the one in which the Heidelberg jaw was found, the presence of an extinct rhinoceros could not be made a determining factor in estimating the age of the human remains.

MAN AND HIS ANCESTORS

Nature had only made them "strange bed-fellows."

Dr. Osborn also tells us that the fossil remains to which have been assigned the names "Pithecanthropus" and "Piltdown," had, like Heidelberg, drifted in with the river sands to the place where they were discovered. This being the case, how would it be possible to determine their age or the conditions under which they lived? The facts are, the age of these human fossils—if human they are—has been determined almost wholly on the grounds of anatomical distinction—a method which is, to say the least, highly untrustworthy.

VIII. THE NEANDERTHAL RACE.

And now comes the much discussed, and possibly abused, Neanderthal type of men who are supposed to have lived in Europe during the Fourth Glacial Period, 50,000 to 25,000 years ago. The first of these remains was found by some workmen in a dirt-filled cave near Dusseldorf, Germany in the year 1856. The find consisted of a skull-cap, leg and arm bones, a right shoulder blade and several pieces of broken ribs. Other finds made later and classified as "Neanderthal," are: the Spy men (Designated as I and II) found in the province of Namur, Belgium in 1886; the Krapina collection discovered in a cavern in northern Croatia in 1899, consisting of portions of many skeletons of both adults and children; the "Old Man" of La Chapelle-aux-Saints in southern France; and fifteen or twenty other finds of more or less importance.

Neanderthal men are said to have been about 5 feet and 3 inches in height, while the females of the race

MAN AND HIS ANCESTORS

averaged less in stature. The thigh bones were slightly curved, indicating that the posture was not entirely erect. It is said that the head and face of these men and women were thrust forward in an ape like manner, and that their anatomical structure pointed to a clumsy, shuffling, loose-jointed being of great muscular strength. Measured by the presence of ape-like characteristics, certain (But not all) of the Neanderthals displayed more marked simian qualities than any other type of human beings that antedated them in time.

How, then, are these so-called simian qualities to be accounted for? Most evolutionists would, doubtless, seek to explain them on the grounds that Neanderthal was an intermediate type on the upward climb from an ape-like ancestry toward true man. Others, however, have suggested that the curved or bowed-legs which seemed to characterize this type, might have been a non-heritable acquisition induced through an assumed stooping posture in stocking game. Doubtless, if we were acquainted with the manners, customs and daily life of these ancient hunters their anatomical peculiarities would explain themselves. The rapidly disappearing cow-boy provides a good illustration of how a full-fledged, non-heritable, case of bow-legs can be developed during the first twenty-five or thirty years of life. The facts are, we do not know from what source, or by what means, Neanderthal got his bow-legs, but we have not yet found sufficient evidence for thinking he got them from some ancient anthropoid ancestor which was neither ape nor man.

In this connection it is well to recall that Pithecanthropus who is supposed to have lived 450,000 years

MAN AND HIS ANCESTORS

before the days of the Neanderthal Race, was "erectus." That is, a creature resembling man who lived on this earth almost a half-million years before the coming of Neanderthal man, seemed to possess a normal human leg. According to the evolutionary law of progression, the leg of Neanderthal man who lived but 25,000 years ago should have approximated more closely the leg of modern man, than any human or pre-human type which lived four or five hundred thousand years earlier. But such is not the case; the femur bone of Pithecanthropus is anatomically nearer to that of modern man than that of any member of the Neanderthal Race. Instead of progression we have retrogression.

Again, the Rhodesian Man of South Africa, whose skull according to Dr. A. Smith Woodward, is the most primitive yet found had, according to this same high authority, a normal human leg, and is . . . "believed to have maintained an upright position, because the femur is relatively straight and when fitted to the tibia presents a perfectly good, straight leg" (*Woodward in "Science,"* Feb. 3, 1922.) The disciples of the "Ape-Man" theory in their efforts to discount the evidence of modern characteristics found in some of the fossils of ancient man, say that Pithecanthropus, Rhodesian man and the Neanderthals were divergent races of men between whom there was no genetic connections. That may be true, but if it is, what right do these same gentlemen have for presenting the same specimen as evidence when they come to discuss such items as decreasing eye-brow ridges, lessening of the jaw and teeth, increase of chin projection, stooping posture, receding forehead, increasing brain capacity

MAN AND HIS ANCESTORS

and etc., etc.? If there is no genetic connection between these varying human remains, then the arguments for man's simian descent based on these remains are absolutely worthless.

Professor Lull has expressed the conviction (*Organic Evolution*, p. 685) that "man's physical evolution has virtually ceased, but in so far as any change is being effected, it is largely retrogressive. Such changes are: Reduction of hair and teeth, and of hand skill; and dulling of the sense of sight, smell and hearing upon which active creatures depend so largely for safety." If this conviction is sound, and there seems to be some reason for believing that it is, then it may be that the Neanderthals got an early start on this downward course and by the time of the "Old Man" of La Chapelle-aux-Saints, had made considerable progress on the downward road. At least it would seem they fell a rather easy prey to the sturdy Cro-Magnon peoples who supplanted them.

And yet we would infer that Neanderthal was not in the least lacking in brain power, for they were equal to, if not superior in this respect to modern man. Drs. Schaaffhausen and Broca estimate the brain capacity of these men as ranging anywhere between 1300 and 1700 c.cm. (cubic centimeters.) In fact the brain capacity of Spy II has been estimated by these authorities as high as 1723 c.cm. The average for modern white men is 1450 to 1500 c.cm. Much has been said and written relative to the shape of the Neanderthal brain, especially the reduced size of the frontal lobe, as though mentality were located in that, or in any other single portion of the brain. The writer

MAN AND HIS ANCESTORS

of Chapter XV. ("The Science of the Mind") in *The Outline of Science* has some very interesting comments on this fallacy: He says, "There is no lobe in the brain that is the seat of intelligence. It is the whole cortex, we might almost say the whole nervous system, or the whole body, that is concerned in intelligence, not any single region of it. . . . Great ability, great intelligence even, are not dependent primarily on the brain" (vol. 2, p. 543.) Certain physical forms of activity can be localized in the brain, while mental processes would seem to involve the whole brain in general and no one part of it in particular. The light frontal lobe of the Neanderthal brain can not be made to militate against his general mental capacity. For after all, the thing that counts most for intelligence is not brain weight, size or shape, but brain connections, and it is utterly impossible to arrive at anything like a true estimate of the brain connections that once existed in the skulls of this extinct race of men.

There are some things about these men, however, that we do know: We know that their arms, hands, fingers, legs, feet and toes; the shape of their heads, chins, jaws, teeth, and eye-brow ridges could be duplicated many times over among men living to-day in different portions of the world. In fact, Professor Macnamara after a most careful study of various types of skulls is convinced that certain Australian and Tasmanian specimen possess practically all the distinguishing characteristics of the Neanderthal type. The difference between Neanderthal and certain types of modern men, is simply one of degree, just as Mongolian, Tasmanian, Eskimo and the true African Negro

differ from the Anglo-Saxon. There is a wide range of difference to be found among the skeletal remains of the Neanderthals themselves. The anatomical difference between the original find of 1856, and the remains designated as "Spy II" is as great as that between Spy II and many modern Tasmanians.

IX. SOME "UNORTHODOX" TYPES OF ANCIENT MEN.

There are other human remains which would seem to far antedate Neanderthal in point of time, but about which one hears very little these days, especially from the lips or pens of the regular orthodox paleontologist. This silence on the part of these gentlemen may be due to the failure of these remains to "conform" to certain theories relative to man's supposed origin and evolution. Geologically these remains are undoubtedly old, but anatomically they are so modern in practically every respect as to completely upset everything the evolutionist (of a certain type) has been saying that men of their age ought to be. These gentlemen have gone on the assumption that any human being who lived so far back as 350,000 years ago should show numerous characters intermediate between apes and men, but so long as the remains in question do not display these presumed characters they must be quietly eliminated from the record.

The Calaveras skull discovered in California in 1866, and now preserved in the Peabody Museum of Harvard University, is one of the discarded specimen. This skull, according to Professor J. D. Whitney, then State Geologist of California, was found buried in the gold-bearing gravels of the Pliocene age. Sir Arthur Kieth says (*Antiquity of Man*, p. 472) that the gravels

in which this human specimen was found, lay buried under a bed of lava which spread out over this region during Miocene and Pliocene times, and embedded in these same gravels were found the stone implements and weapons of ancient men. Professor Jeffreys Wyman, anatomist at Harvard, after an examination of this skull said that it revealed no indications of having belonged to an inferior race.

Paleontologists assume that the age of any human fossil can be determined—irrespective of the geological formation in which it is found—by its degree of resemblance to the ape, and at the same time they assure us that man descended from no living species of apes now in existence. As the Calaveras skull shows no ape-like characters, but on the other hand is anatomically similar to the skull of modern man, these learned gentlemen, true to their own arbitrary standard of measurement, cast it out as an "impostor." The geological evidence for the great antiquity of Calaveras is far stronger than that for any other specimen which we have so far considered. Professor Lull has well expressed the attitude of certain scientists when he says (*Ways of Life*, p. 270) "Because this skull (Calaveras) is so anatomically similar to the skull of modern man, paleontologists are inclined to question its antiquity." That is, it does not conform to a hypothetical standard which these gentlemen have arbitrarily created.

Sir Arthur Keith commenting on the probable age of the Calaveras skull says (*Antiquity of Man*, p. 473.) "Indeed were such discoveries in accordance with our expectations, if they were in harmony with the theories

MAN AND HIS ANCESTORS

we have formed regarding the date of man's evolution, no one would ever dream of doubting them, much less of rejecting them." In considering this quotation, do not fail to note Dr. Keith's "in accordance with our expectations" and "in harmony with the theories we have formed." Here we have, clearly revealed, the nature of the methods employed by paleontologists in determining the age of a given fossil, and the revelation is made by England's outstanding authority in that field.

If Calaveras could in some way be forced to shed his marks of modernity then the paleontologist would, in all probability, assign him to the "honor roll" along with such other worthies as Pithecanthropus, Piltdown, Heidelberg and Neanderthal. But because he is not "in accordance with expectations" and is not "in harmony with theories already formed" he is refused a place in the Hall of the Age of Man, ignored by Dr. Osborn in his *Men of the Old Stone Age*, and is accorded the same treatment that is always inflicted upon non-conformists by those in supreme authority.

The Foxhill jaw found in England more than fifty years ago, bears no marks of the pre-human, and is said by Professor Lull (*Evolution of Man*, p. 37) to antedate both Heidelberg and Piltdown in point of time. The Galley Hill skull found also in England in 1888 is said by Dr. Keith to have lived at least 350,000 years ago, and to have corresponded to modern man in practically every respect without displaying any of the pre-human characteristics thought to be found in Pithecanthropus and other missing links. In

MAN AND HIS ANCESTORS

another connection (*Ancient Types of Man*, p. 32) Keith says the Galley Hill Man was "so modern in build that we might meet him on the streets of London today and pass him by unnoticed." The Brunn skull found in Moravia in 1891 embedded in loess along with the bones of the woolly mammoth and other Pleistocene animals, was according to Dr. Osborn possessed of a high forehead, a brain capacity of 1350 c.cm., a prominent chin, and was lacking in heavy eyebrow ridges and jaw protrusion. (*Men of the Old Stone Age*, p. 334.)

It seems just the least inconsistent on the part of paleontologists to determine the age of the Heidelberg jaw by its close proximity with the bones of extinct animals, and then refuse to accept the same kind of evidence in determining the age of the Brunn skull. Here again, as in the case of the Calaveras skull, these men are basing their calculations, not on the geological age of the strata in which the remains were found; not on the remains of extinct animals with which the skull was associated; but entirely on its anatomical similarity to the skulls of modern men.

If paleontology is to speak the final word establishing man's animal ancestry, as predicted by Huxley a half century ago, then that word is yet to be spoken. Man may be a blood relative of the lowly ape, but the evidence necessary to establish that relationship is still lacking. Man's hypothetical ape-like ancestor is no more of a reality today than it was in the days of Huxley. Propleopithecus, Sivapithecus and Dryopithecus have been appealed to, but like the good old fashion

MAN AND HIS ANCESTORS

apes that they were, remained true to type. No man-ape nor Ape-man have ever been found; if such creatures ever existed no one now living ever saw them alive or dead. The facts upon which this hypothesis is based simply do not exist. The famous paleontologist, Brance, seems to have been correct in his emphatic declaration that "The ape-man has no existence in fact, and the missing link remains a phantom." So we close with the conviction that the virtues of this theory seem to be quite heavily overbalanced by its many defects.

X. SOME OF THE AUTHORITIES CONSULTED IN THE PREPARATION OF THIS BULLETIN.

Baitsell, George Alfred. (Ed.) *The Evolution of Man*. Yale University Press, New York. 1922.

(A series of lectures delivered before the Yale Chapter of the Sigma Xi during the academic year 1921-1922. Professor Lull of Yale reviews the evidence for man's animal ancestry.)

Churchward, Albert. *Origin and Evolution of the Human Race*. The Macmillan Co., New York. 1922.

(The position which this writer rather dogmatically presents and seeks to defend is that "homo" first appeared in the upper valley of the Nile, and from that region migrated to the four corners of the earth.)

Elliot, George Francis Scott. *Prehistoric Man and His Story*. The J. B. Lippincott Co., Philadelphia. 1915.

(An interesting story of human life in its ascent from what the author regards as rather rudimentary beginnings.)

MAN AND HIS ANCESTORS

Keith, Sir Arthur. *Antiquity of Man*, 2 vols. The J. B. Lippincott Co., Philadelphia. 1915 and 1925.

(The author of these volumes, who is a noted physician, traces the ascent of man from the anatomical point of view. A most fascinating book even though one may not always be in sympathy with the writer's conclusions.)

Kellogg, Vernon. *Evolution the Way of Life*. D. Appleton & Co., New York and London. 1924.

(An untechnical presentation of the primary factors in the evolutionary process. Intended for the general reader.)

Klaatsch, Herman. *Evolution and Progress of Mankind*. Frederick A. Stokes Co., New York. 1923.

(The best and most trustworthy account of the latest theories as to the polygenesis or multiple origin of man.)

Lane, Henry Higgins. *Evolution and the Christian Faith*. Princeton University Press, Princeton, N. J., 1923.

(The author of this volume seeks to show that there is no inherent antagonism between Christian theism and the biological doctrine of evolution.)

Lull, Richard Swan. *The Ways of Life*. Harper and Brothers, New York and London. 1925.

(A restatement of the proofs for the theory of evolution. The middle section of the book deals with prehistoric man.)

McCann, Alfred Watterson. *God or Gorilla*. The Devin-Adair Co., New York. 1922.

(In spite of Mr. McCann's rather pugnacious attitude throughout, he presents the strongest case against

MAN AND HIS ANCESTORS

the ape-man theory that has been made by any one during recent years.)

McCurdy, George Grant. *Human Origins*. 2 vols. D. Appleton & Co., New York and London. 1924.

(The author of this comprehensive work discusses not only the development of man's body, but also the supposed origin and development of his mind as well. The best book on prehistoric man by any American scholar.)

Newman, Horatio Hackett. (Ed.) *Readings in Evolution, Genetics, and Eugenics*. University of Chicago Press, Chicago. 1921 and 1926.

(Chapter VI dealing with "The Evolution of Man" by Professor Lull of Yale University, is an admirable summary.)

Newman, Horatio Hackett. (Ed.) *The Nature of the World and of Man*. University of Chicago Press, Chicago. 1926.

(See, especially, Chapter XI by Professor Alfred S. Romer on "The Evolution of the Vertebrates" and Chapter XII by Professor Fay-Cooper Cole on "The Coming of Man.")

Osborn, Henry Fairfield. *Men of the Old Stone Age*. Charles Scribner's Sons, New York. 1915 and 1918.

(A popular synthesis of practically all that geology, paleontology, anthropology, and archeology have to tell us concerning prehistoric man. A standard work in its field.)

O'Toole, George Barry. *The Case Against Evolution*. The Macmillan Co., New York. 1925.

(Professor O'Toole, a Catholic scientist, holds to the view that evolution has long since degenerated into

MAN AND HIS ANCESTORS

a dogma which is accepted in spite of the facts, and not on account of them. A scholarly book but not easy reading.)

Simpson, James Young. *Man and the Attainment of Immortality*. George H. Doran Co., New York. 1923.

(Considerably more than half of this admirable book is devoted to a discussion of biological evolution and the hypothetical origin and development of primitive man.)

Smith, G. Elliot. *Evolution of Man*. Oxford University Press, New York and Oxford. 1924.

(A large section of this book is devoted to a study of human fossils and the implements used by primitive men.)

Thomson, J. Arthur. (Ed.) *Outline of Science*. 4 vols. G. P. Putnam's Sons, New York and London. 1922.

(Especially Chapter V of the first volume, written by Professor Thomson, himself, on "The Ascent of Man." A popular, untechnical, presentation.)

Thomson, J. Arthur. *What is Man?* G. P. Putnam's Sons, New York and London. 1924.

(An exposition of what are presumed to be the fundamental facts establishing man's affiliation with the Primates. Chapters I and II deal especially with early man and his pedigree.)

Tyler, John M. *The Coming of Man*. Marshall Jones Co., Boston. 1923.

(A simple and readable account of the evolution of man in which morality and religion are given a rather prominent place.)

Wells, H. G. *The Outline of History*. The Macmillan Co., New York. 1920.

(Chapters VII, VIII, and IX of this popular history

MAN AND HIS ANCESTORS

give a most admirable survey of the biological road which early man is thought to have traveled.)

Wilder, Harris Hawthorne. *Man's Prehistoric Past*. The Macmillan Co., New York. 1923.

(Similar in treatment to Osborn's "Men of the Old Stone Age." A good summary of the entire field of prehistory so far as the facts are available.)

Dr. Honline has in preparation a series of Bulletins similar in style with his "*Man and His Ancestors*," on the general theme "*Cross-Currents in Modern Religious Thought*." Such subjects as the following will be discussed:

The Bible: What It Is and What It Is Not.

The Bible in An Age of Science.

The Bible and Civilization.

Is the New Testament Trustworthy?

In What Sense is the Bible God's Word?

The Historical Development of the English Bible.

The Evolution of Christianity.

Christianity and Modern Thought.

The Foundations of Christianity.

The Christ of History.

Evolution in Fact and Fancy.

Rival System of Philosophy.

Fundamentalism versus Modernism.

The Man-Making Process.

The Moral Status of the Child.

Religion and the Younger Generation.